Ideas for Maths at Home – Year Six

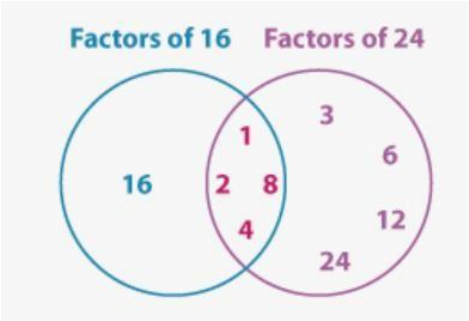
Pupils at St John's Primary School participate in a Maths lesson every day where their knowledge and skills in many areas of Maths are practiced and added too. Pupils will be set Maths homework that matches learning in class from Year 1 onwards, but if you have time here are some additional activities you can do at home that will support your child's mathematical development this year.

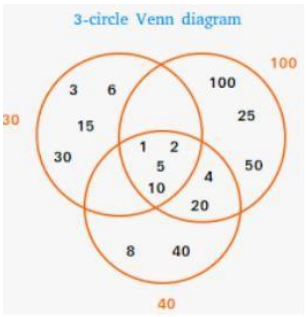
Some of the key mental skills we will focus on with your child this year are:

- Solve mental calculations, including with mixed operations and large numbers
- Use all the multiplication tables to calculate mathematical statements in order to maintain their fluency.
- Be able to convert fractions to decimals or percentages and vice versa.
- To know prime numbers to 100.

Practical resources and ideas:

- If I know … then I know … Give your child a multiplication or division statement, how many linked facts can they find eg 6 x 7 = 42, 60 x 7 = 420, 420 ÷70 = 6, 600 x 7 = 4200 etc
- Make a set of cards for the numbers from 2 to 100. How quickly can your child sort these into prime and composite numbers? How many even prime numbers can they find? How many odd composite numbers can they find? Please note that 1 is not a prime or composite number.
- Select a list of numbers such as from 70 to 80 and allow your child to use a calculator to investigate factors. eg start with 70 ÷ 1, then 70 ÷2, 70 ÷3 etc until they think they have found all the factors.
- Pairs game- make your own fraction, decimal, percentage card matching game.
- Give your child two numbers and ask them to find all the factors, then identify and common factors. These could be recorded in a venn diagram. You could also challenge pupils to find common factors of 3 numbers.





WEBSITES that could be useful:

- Prime Numbers: https://www.bbc.co.uk/bitesize/topics/zfq7hyc/articles/z2q26fr
- https://www.transum.org/Maths/Game/Primes/Pick.asp
- https://www.topmarks.co.uk/maths-games/multiples-and-factors
- Finding fractions of an amount: https://www.topmarks.co.uk/Flash.aspx?f=bingofractionsofamountsv3
- This website has a range of games on fractions: https://www.topmarks.co.uk/maths-games/7-11years/fractions-and-decimals
- A fun game to improve the speed of converting fractions and decimals: https://www.mathplayground.com/ASB_Puppy_Chase_Decimals.html

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In the build up to SATs and beyond, our Year 6 pupils will focus on learning and securing facts that are going to support them in the future, both at secondary school and in life. The following pages highlight some further key facts that we would expect pupils to know by the end of Year 6.

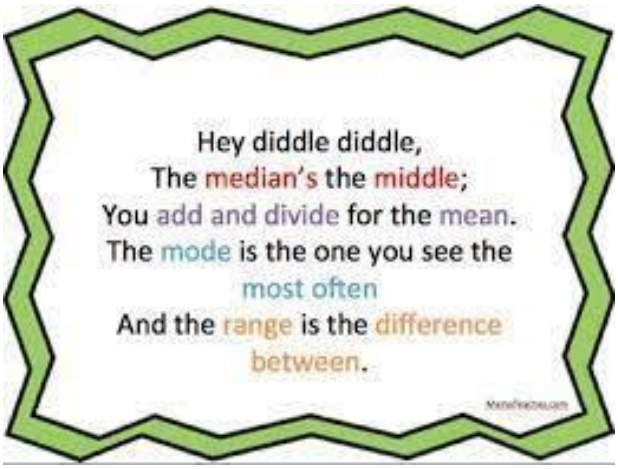
For more information on:

- Adding and Subtracting
- Multiply and divide
- Ratio

Please refer to: https://www.bbc.co.uk/bitesize/subjects/z826n39/year/zncsscw

Numbers Knowledge:

- A prime numbers has exactly 1 factor pair. The pair is always 1 and the number itself. 1 is not a prime number, as it only has one factor: 1 x 1 = 1
- 2 is the only even prime number.
- You should be able to list the first 10 prime numbers: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29
- Square numbers are numbers that are multiplied by itself (3x3=9)
  Cube numbers are numbers that are multiplied by itself three times (3x3x3=27 or 4 x 4 x 4 = 64).
- To calculate the mean (an average of a set of discrete data):
  You need to add all the numbers together and then dividing your total by the amount of numbers there were, for example:
  1 + 5 + 6 = 12
  12 ÷ 3 = 4
  So the mean is 4
- You may also be asked to find the mode or median of a group of numbers.
  Mode = Most often appearing number. So in the set: 3,4,4,5,6,7,7,7,8 the mode would be 7 as there are 3 of them.
  Median = the middle number, if you placed all the numbers in a set in order from smallest to largest, the middle number would be the median.
  For example in the set: 3,4,4,5,6,7,7,7,8 . There are 9 numbers in the set, the 5th one is the middle number, so the median is 6.
  The range is the difference between the smallest and largest numbers in a list or set. To find the range, first put all the numbers in order. Then subtract the smallest number from the largest. The answer gives you the range.



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- Order of operations - BODMAS
  This expression helps pupils to know which to calculate first in an equation where there are multiple calculations, the letters stand for:
  B = brackets
  O = order (square numbers)
  D = division
  M = multiplication
  A = addition S = subtraction e.g. 3 + 2 x 4
  Multiply 2 x 4 first and then add 3 = 11

Fractions, Decimals and Percentages:

- Pupils should know and be able to convert between facts such as:

½ = 0.5 = 50%
1/3 = 0.33 = 33%
¼ = 0.25 = 25%
¾ = 0.75 = 75%
1/5 = 0.2 = 20%
1/10 = 0.1 = 10%
3/10 = 0.3 = 30%
7/10 = 0.7 = 70%
1/100 = 0.01 = 1%
9/100 = 0.09 = 9%
35/100 = 0.35 = 35%

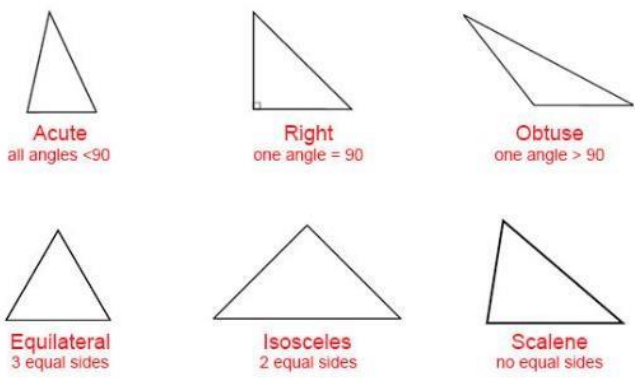
- Pupils should be able to add, subtract, multiply and divide fractions and know key facts such as:

½ + ¼ = ¾ ¾ - ½ = ¼ 1/5 + 2/10 = 2/5 1/3 + 2/6 = 2/3
¼ + 2/8 = ½ ¾ - ½ = ¼ ¾ - 2/8 = ½ 2/5 – 2/10 = 1/5
2/3 – 2/6 = 1/3 ½ - 2/8 = ¼

- To multiply two fractions together, multiply the numerators and multiply the denominators e.g. 1 /2 x 1/ 4 = 1/ 8
- To divide proper fractions whole numbers, keep the numerator the same and multiply the denominator by the whole number. e.g. 1/ 3 ÷ 4= 1/12

Angles and Triangles knowledge:

- The area of a triangle = base × height ÷ 2
- The angles in a triangle add-up to 180°
- The angles on a straight line add-up to 180°
- The angles round a point add-up to 360 °
- The angles in a quadrilateral add-up to 360°
- A scalene triangle has 3 sides of different length and 3 angles of different size
- An isosceles triangle has 2 equal length sides and
  2 equal size angles



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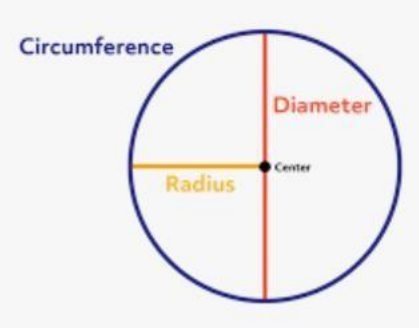
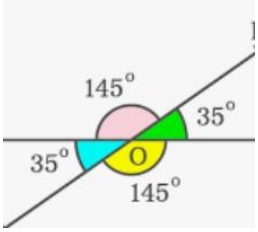
- An equilateral triangle has all sides and angles equal: each angle in an equilateral triangle is 60°
- An acute angle is less than 90°
- A right angle is exactly 90°
- An obtuse angle is greater than 90° but less than 180° • A reflex angle is greater than 180° and less than 360°

Circles Knowledge:



- A circle contains a radius, circumference and a diameter:
- The radius is the length from the circumference of a circle to its centre.
- The circumference is the length of the edge of a circle.
- The diameter is a straight line going through the centre of a circle connecting two points on the circumference.
- The diameter can be found by multiplying the radius by 2 (d = r x 2).

Additional Geometry Knowledge:



- Vertically opposite angles are equal
- The area of a parallelogram = base × height
- The perimeter is the distance all the way around the outside of a 2D shape.
- To work out the perimeter, add up the lengths of all the sides.
- Lines are parallel if they are always the same distance apart (called "equidistant"), and will never meet. (They also point in the same direction).
- Perpendicular lines are lines that intersect each other at exactly a ninety degree angle. (Intersecting lines are where two lines meet or cross one another.)
- The volume of a cube or cuboid = length x width x height.

Useful facts to know:

- Know the rough equivalence between miles and kilometres (5km = 8miles)
- Know 24 hour clock time to 12 hour am/pm time and vice versa : 5 o'clock = 17:00, know facts such as ¼ of an hr = 15mins
- Know how to read/label coordinates in 4 quadrants: